

MONTAGE

NEWS AND VIEWS FROM MONASH UNIVERSITY

International gene bank to breed elite guide dogs

Monash University's Institute of Reproduction and Development is expanding its role as a leader in animal reproductive gene storage to include breeding superior guide dogs.

The institute, in conjunction with the Royal Guide Dogs Association of Australia (RGDAA) and the Yarra View Veterinary Hospital in Lilydale, Victoria, is establishing an international guide dog gene bank to store semen from some of the world's most capable guide dogs.

A research project funded by the Rural Industries Development Corporation enabled the institute, together with the hospital, to develop new techniques for assisted reproduction in Australian working sheep and cattle dogs.

The research included developing a new non-surgical transcervical insemination technique that allows thawed semen to be deposited directly into the uterus of guide dog bitches. These procedures have now been adopted for artificial insemination in the bitches with great success.

The institute's Dr Ian Gunn said the RGDAA had been using frozen semen for artificial insemination for the past 2 years with unprecedented success.

"Since September 1994, 15 producing guide dog bitches have been artificially



inseminated at the hospital, using semen imported from the US and UK," he said. "And as of August 1996, a 100 per cent conception rate – producing 6.28 puppies per litter – has been achieved."

With this kind of early success, the research has attracted the attention of guide dog breeders around the world, along with calls to establish an international guide dog gene bank. Interest has come from France, Brazil, the UK, the US and Denmark.

Last year the institute received wide media coverage when it launched a gene storage bank to preserve rare and endangered animals. And while guide dogs are neither rare nor endangered, establishing a guide dog gene bank does have international implications.

"The main aim of the bank is to improve the quality and selection of the

dogs internationally," Dr Gunn said. "Enlarging the gene pool will improve the genetic merits of the breed world-wide and allow for international transfer of superior breeding sires."

And the genetic potential of the world's elite guide dogs would be available to Australia's relatively small guide dog gene pool of 35 breeding bitches. Access to America and England's pool of 400 breeding bitches alone would substantially increase the potential combinations.

"As well as functioning as an international transfer point, the gene bank would act as a reserve bank to preserve breed-lines in case of death or disease outbreak," Dr Gunn said.

In Australia, the initial international exchange of genetic material was undertaken by importing top stud dogs from the US and England to breed with Australian bitches. But according to RGDAA's breeding manager Mr Jozsef Kolosi, success was limited because of cost and inconvenience. In some cases, the best guide dog producer stud dogs were also not for sale.

Dr Gunn said it was almost impossible to begin a successful international genetic guide dog breeding program without an established gene bank and the adoption of new assisted breeding techniques.

Continued on Montage 2

• Clicked images of Australia come under fire (3) • Domestic violence uncovered (7)
• Research gives new hope to women facing infertility (10) • Savant: Whose mandate? (16)



Spike

Buyer beware

Among the usual offers from people wishing to donate their bodies to science at Monash was the following variation: One man – who didn't wish to burden his family with the cost of a funeral – decided that Monash could dispose of his body by dividing it up among its medical students. Then there was the caller who claimed to possess Sir John Monash's ashtray: Did the university want to buy it for its memorabilia collection?

Buddy, can you spare a dime?

Times are tough in tertiary education, and you shouldn't criticise the attempts of some universities to raise funds. Consider the request made to Monash Public Affairs, in writing, from Sydney University's Development Office to donate, and donate generously, to their 1996 Annual Appeal.

When in Rome, or is that Mars?

The Gippsland School of Business & Electronic Commerce reports that among its many pilot projects, the SociCtC Internationale de Télcommunications AÇronautiques (SITA) has been completed. Obviously not for general consumption.

And now for the weather ...

Accounting Services has come up with a new concept in teamwork and communication. Apparently a 'Departmental financial officers forum' will help staff negotiate the maze of policy and procedures attached to Monash's accounting practices. It is edifying to note the initials of this group: DFOG – a most calculated acronym.

NOW & THEN

25 Years Ago

Open Day '71, held on July 10, attracted the largest number of visitors the university has ever had.

Estimates of the crowd varied from 13,000 to 17,000. The Open Day Director, Mr R. R. Belshaw, said most observers agreed that, at the peak period during the afternoon, at least 12,000 people were on campus.

This year, for the first time, visitors were invited to complete a questionnaire designed to gauge public reaction to the event and to help in formulating ideas for the conduct of future Open Days.

15 Years Ago

Monash chemists have achieved a world first.

They have developed a method of detecting the spectral lines – the "chemical fingerprints" – of electrically charged molecules.

The method, which opens up new fields of chemical analysis, was conceived by Professor Ron Brown in 1975.

Success came last week with the detection by his team of the spectral lines of an electronically charged molecule of carbon monoxide.

5 Years Ago

Malaysia's Minister for Education has described Monash as "one of the world's great universities".

A speech by the minister was delivered to the recent Monash graduation ceremony in Kuala Lumpur of 95 Malaysian students.

The Minister, Datuk Dr Haji Sulaiman Daud, said Monash had developed an in-depth knowledge of the Malaysian culture and commercial environment. He said this not only facilitated the integration of Malaysian students into the university community, but was also being used by Australian businesses seeking to create ties with Malaysia.

This Month Last Year

A senior lecturer in physics and expert in radiation research at Monash University believes the French have lied over the stated reason for resumption of nuclear testing in the Pacific.

Dr Don Hutton does not believe the official explanation that testing is being undertaken to perfect computer simulation models of nuclear explosions.

"The tests are most probably needed to develop new 'third generation' weapons, such as neutron bombs, for which computer simulations cannot give all the technical answers," Dr Hutton said.

International gene bank to breed elite guide dogs

From Montage 1

"The US are generally not going to send their top breeding dogs to Australia or any other country to mate, and any dog they do send would be in quarantine for six months," he said.

But sperm coming into Australia does not face the tough quarantine regulations that apply to live animals – there is no quarantine limit on frozen semen coming from England, and only a 14-day period on semen from the US, although in both cases standard health tests are required.

Mr Kolosi said only "the best of the best" guide dogs were selected as breeding stock in a comprehensive test of health and temperament.

"Each dog's temperament is scored between zero and three, with zero being the best," he said. "Dogs judged at two are considered borderline and are considered unsuitable if extra training sessions do not bring them up to a one."

The dogs that are unsuitable for guide dog work may be trained as Pets as Therapy companion dogs for placement with people who have a physical, psychological or social disability.

Dogs identified as a zero or one are the elite, and are then given extensive health checks. The healthiest dogs with the best temperaments become guide dogs and are considered potential breeding stock.

Initially, the bank will store the semen of stud guide dogs, but in the future Dr Gunn and Mr Kolosi are hoping to preserve embryos, and in the rare cases where a top dog or bitch dies prematurely, their testes and ovaries could be saved, stored and used in future breeding programs.

By JULIET RYAN

MONTAGE

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Olympics imagery a challenge



Photo: Leigh Winburn, Herald Sun

Australia had just over 11 minutes of fame at the Atlanta Olympic Games closing ceremony. It was a rare chance to promote our nation to billions of TV viewers around the globe – and we blew it, according to Monash mass communications lecturer Ms Leanne White.

She said that if the Aboriginal dancers surrounded by inflatable kangaroos and giant waratahs were a taste of what was planned for the Sydney 2000 Olympics, then it was time for “some serious public debate” about what imagery best defines who we are and where we are heading.

Ms White believed the producer of Australia’s closing ceremony contribution, Mr Ric Birch, had selected outdated and clichéd symbols to represent the nation, NSW and Sydney.

“We witnessed Aborigines with didgeridoos, kangaroos, cockatoos and waratahs, Bondi lifesavers and the Sydney Opera House,” Ms White said.

“When Australia celebrated its sesquicentenary in Sydney in 1938, Aborigines led a procession of floats that included Bondi lifesavers and wildflowers. Surely we have progressed further than this in almost 60 years.

“The rest of the world knows we have unique flora and fauna – Joseph Banks told them that in the 18th century.”

Even if overseas viewers were amused or entertained by such conventional icons, it was important to consider what messages Australians deemed appropriate.

“A lot of people in the world have very little idea, or the entirely wrong idea, about what modern Australia is like,” she said.

The Atlanta spectacle said nothing about Australia as a mature, multicultural country and only reinforced the notion of “kangaroos bounding down Bourke Street”.

“It doesn’t have to be a case of kangaroos versus cappuccinos, but the Sydney Olympic ceremonies could focus on presenting us as a high-tech country in an increasingly global society.”

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Ms White, who completed a masters thesis in 1994 on nationalism in Australian TV advertising, said even television (which is often accused of being slow to reflect changes in society) had begun to abandon traditional patriotic stereotypes.

She said nationalistic advertising using “landscapes and landmarks” imagery reached its peak during the 1988 bicentennial, but the recent trend was to produce international commercials that had appeal across cultures.

“Coca Cola was probably the first to make these, and the British Airways commercials are another good example.”

And while actors used in advertising in Australia still tended to fall into the bronzed, blonde and blue-eyed category, the 1990s had produced more positive images of Aborigines and greater recognition of Australia’s multicultural nature.

“Students in my classes who now see these bicentennial commercials describe them as incredibly dated and old-fashioned,” Ms White said.

But she said the build-up to the Sydney Olympics would be similar to that of the bicentennial, and there was a danger that advertising agencies – including those creating celebration themes – would return to the 1988 style.

“Government agencies promoted a form of nationalism in the 1980s, and commercial interests seized the opportunity to ride on the back of that.

“If we are going to move beyond this kind of image, the impetus is only going to come from public debate. Agencies will be understandably reluctant to lead any move away from ‘safe’ stereotypical images when they are under the pressure of playing with so much of other people’s money.”

She welcomed NSW Premier Bob Carr’s willingness to raise the issue. His immediate reaction to the Atlanta closing ceremony was that we should make more effort to “steer away from the clichés”.

BY GARY SPINK

Grim future for Australia's carmakers

Australia's car manufacturing sector is destined to fold by the year 2002 unless the Federal Government overhauls the Button car plan, a Monash study indicates.

The report – by a research team in the university's Quality Management Research Unit – predicts that under the existing plan, the nation's four car makers may be forced to wind down their current production cycles before 2000, with local manufacturing ceasing by 2002.

The 13 major component suppliers currently exporting would also be forced to move offshore, according to the unit's director and research project leader Professor Amrik Sohal.

The grim forecast – which the researchers estimate could have the effect of forcing car prices up 23 per cent and increasing national unemployment by 25 per cent – is based on continuing the current industry policy of tariff reduction and the phasing out of export support schemes.

Introduced in the mid-1980s, the existing policy aims to reduce car tariffs by 15 per cent by 1998 through annual reductions of 2.5 per cent. Currently, the tariff level is 25 per cent.

But together with co-researchers Mr Trevor Pratt and Mr Richard Schroder, Professor Sohal has developed an alternative to the industry plan.

Their proposal recommends a package of tariff reforms, export incentive schemes and industry innovations, which the team believes could accelerate the car industry's growth.

"A new policy framework is needed through which to create the environment

to develop a competitive and viable car industry into the 21st century," Professor Sohal said.

The report's release – which coincides with the Industry Commission's scheduled 1996 car plan review – is the first in a three-part series of working papers on the role and scope of national industry policies within Australia's manufacturing sectors.

The other policies covering both the textiles, clothing and footwear (TCF Plan) and pharmaceutical (F-Plan) industries will be evaluated next.

When complete, the results will be used in the second stage of the project, which aims to develop a 'model' regional strategy for the manufacturing sector in Melbourne's south-eastern suburbs.

Businesses and industry groups will be asked for input at each stage of the project and comment is now being sought on the alternative car industry plan. The team's key recommendations include:

- Reviewing tariff levels to include non-tariff barriers matching the world's best car manufacturers on a bilateral basis.
- Setting a minimum local production target of 500,000 complete built vehicles (Australia currently manufactures about 270,000 vehicles).
- Diversifying car production into smaller and environmentally efficient vehicles.
- Developing a new system of export assistance for manufacturers, equivalent to a tax restructuring, for up 40 per cent of locally made cars.
- Establishing incentive-based export schemes in which credits are earned for exports. The system would allow for one car to be imported for every export and



provide for double-import credits for every environmentally powered car exported.

- Broadening the role of the existing Automotive Industry Authority to monitor and oversee the industry plan's development.

According to Mr Pratt, by reviewing the current policy of tariff level reductions and introducing non-tariff barriers that matched the world's best, Australia would be placed on a more equal footing in international trade negotiations.

Diversification into small car production would also bring Australia's car industry into line with market demand.

"The Button plan has been based on production of five models, but the local and overseas market is for a greater variety of smaller cars," Mr Pratt said. "The bigger cars, such as Falcon, Magna and the Commodore, are largely designed for the Australian market – very few of them end up overseas."

Mr Schroder said the existing car plan did not "appreciate the dynamics of the car industry within the market place".

"While the policy has been successful in accelerating international competitiveness within the car manufacturing sector, it remains removed from many of the realities of the market."

By BRENDA HARKNESS

A view from the historic heights

The head of Victoria's heritage advisory body, Dr Jan Penney, rates the panoramic view from the top of Yallourn Power Station as one of the state's best.

And according to the Monash history lecturer and chair of the recently formed Heritage Council Victoria, the visit to the restricted site was an unexpected bonus in her role managing Victoria's heritage assets.

A less pleasant side of her association with the historically important power station, however, was having to decide its fate, one of the toughest decisions Dr Penney said she has had to face as an advisor to the government on heritage during the past decade.

"The Historic Buildings Council (which the Heritage Council replaced) had to weigh up the potential costs of saving an historically significant building that was obsolete and riddled with asbestos," she said.

"At the same time we were aware that the demolition would create many local jobs."

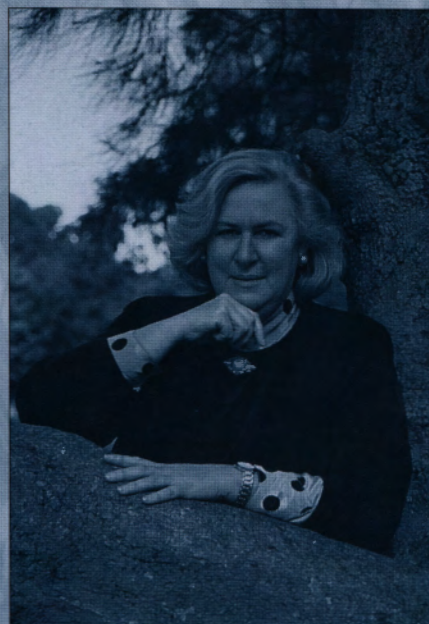
It was an exceptional case – the HBC listed the site on the state Heritage Register (normally used to preserve buildings) but issued a permit for its demolition at the same time.

Dr Penney said the decision to recognise rather than preserve the site showed that a balance could be struck between the competing interests of stakeholders in contentious heritage protection matters.

She said the responsibility of her role often weighed on her mind: "I've had many sleepless nights replaying decisions to ensure that they have been right."

"Sometimes decisions are made more difficult when the site involved is a person's home or a multimillion dollar development involving large shareholder investments."

Dr Penney said a comprehensive assessment framework had been developed by the HBC over the past 25 years to guide decision-making. Criteria used to assess the importance of a site or item included



architectural style, aesthetics and cultural significance.

Under major legislative changes, which took effect in June, accountability for managing and maintaining the state's heritage assets had also been substantially increased.

Replacing the HBC, the independent 10-member Heritage Council Victoria has been charged with administering the new Heritage Act and the Heritage Register – the main device for protecting heritage assets.

The Act consolidates all of Victoria's heritage protection provisions into a single piece of legislation. Previously, historic buildings, shipwrecks and archaeological sites were covered by separate legislation.

Dr Penney said the new Act also broadened the scope of heritage protection to cover all potentially important heritage objects and sites, including gardens, trees, cemeteries and even moveable objects. These items could now be considered for protection on the Heritage Register, which in the past only applied to properties.

Once registered, sites, items and objects are protected, and permits must be obtained from the Heritage Council to undertake works or alterations.

"The biggest challenge will be to develop guidelines to help us assess items that are living and changing, such as parks, gardens, trees and plants," Dr Penney said. "Obviously, in the case of living objects, you can't interfere with nature and prevent plants from growing or trees being struck by lightning."

She stressed that the Heritage Register was selective. In its 25 years of operation, only 1200 sites and buildings had been listed: "Our role is not to save everything just for the sake of it but to recognise the most important aspects of our heritage."

She said Victoria had been a leader in heritage protection and management since 1974, when it became the first Australian state to set up heritage legislation.

And despite criticism of the Victorian Government for its so-called policy of "development at all costs", Dr Penney believed the present government was the most pro-heritage that she had worked for.

"However, there will always be conflicts between heritage and development ... The Missions to Seamen building (at the State Government managed Docklands development site) was one of the recent battles that we fought and lost," she said.

According to Dr Penney, public perceptions of heritage had also changed dramatically to embrace all aspects of culture and history.

Traditionally, people generally associated heritage with obvious architectural styles and periods such as Victorian and Edwardian. But the definition had now broadened to cover industrial history, art deco and even architecture of the 1960s and 70s, she said.

"We don't have a traditional brick veneer on the Register yet, but we are presently looking at some original A.V. Jennings homes in Melbourne's south-eastern suburbs."

BY BRENDA HARKNESS

The ethics of dying

Two years ago Dr Julian Savulescu left Australia to undertake postdoctoral studies at Oxford University on the ethics of dying.

And in April next year he will return to Monash as one of the inaugural Logan Research Fellows.

Dr Savulescu is one of five new appointments made under the university's new Logan Research Fellowship scheme, which attracted more than 100 applications worldwide.

Monash has committed more than \$2 million to the fellowships, offering lucrative conditions and benefits to attract up to 30 world-class postdoctoral researchers over the next six years.

One part of Dr Savulescu's PhD thesis, which he completed while at Monash, investigated the doctor-patient relationship at times when ethical decisions about the patient's care and life were being made.

His work at Oxford has looked specifically at how the medical profession interprets 'advance directives' or living wills, which give patients the right to decide whether or not they want treatment for an illness at some point in the future when they are no longer able to decide for themselves.

He has also been conducting research at Oxford's Subfaculty of Philosophy on the 'rationality of choice'.

Combining his philosophy research with his hospital work as the first clinical ethicist in the UK, Dr Savulescu has developed two policies on advance directives that are in the process of being implemented at the Oxford Radcliffe Hospitals. One document will help doctors decide which directives are valid and carry the force of the law, and which are invalid. The other helps patients construct better directives.

Dr Savulescu's research at Monash will continue to focus on ethical issues facing doctors and patients when making decisions about the end of life.

"At Monash I would like to apply a similar method to clinical problems that I have been working on at Oxford," Dr Savulescu explained. "This includes working with doctors in hospitals to find out what problems they encounter in practice and helping them

develop specific policies using some of the methods and concepts of philosophy."

He is also looking at establishing a close association between Monash's Centre for Human Bioethics and the Centre for Medical Ethics in Oxford.

Deputy vice-chancellor Professor Peter Darvall said the Logan Fellowship scheme aimed to expand Monash's research efforts and ensure the university continued to lead the way in research development and scholarship.

"Compared with other university and national schemes, the Monash initiative is offering substantially larger research support grants, longer tenure and more scope for promotion," Professor Darvall said.

The other inaugural Logan Fellows are:

Dr John Drago

Department of Anatomy

Dr Drago is an honorary senior lecturer in the Medicine faculty, a consultant neurologist at the Monash Medical Centre and a research fellow in the Anatomy department.

He will continue developing techniques to address degenerative neurological diseases, such as Parkinson's, which are associated with slowness of voluntary movement, limb rigidity and tremor.

Dr Sander van der Kaars

Department of Geography & Environmental Science

Dr van der Kaars is one of the world's most noted pollen analysts. He has used his expertise to investigate the causes of extinction and the patterns of short-term climate change.

He plans to study the long quaternary history of the Indonesian/Northern Australia region. His research may challenge the current dating of indigenous occupation of Australia.



Dr Julian Savulescu

Dr Paul Bons

Department of Earth Sciences

Dr Bons completed a PhD at Utrecht University in the Netherlands in 1993 and has since been conducting research at Monash.

He hopes his fellowship research will lead to a better understanding of how the rock structures in the earth's crust were formed, providing greater insight into their mechanical properties and allowing geologists to more accurately interpret field observations.

Dr Andrei Nikulin

Department of Physics

Dr Nikulin completed a PhD at the Solid State Physics Institute of the USSR Academy of Sciences in Moscow in 1990, and has since worked on research projects at universities in Russia, Japan and Australia.

His will be working with X-ray imaging to create a new non-destructive method for mapping the material structure of physical objects. Ultimately, this could have benefits for studies in crystallography, biology and medicine, as well as for the wood and textile industries.

BY JULIET RYAN

Domestic violence linked to industrial restructuring

Gippsland police and social workers are using a crime reduction strategy developed by Monash researchers to curb the area's acute domestic violence problems.

Crime figures show that the total number of serious assaults in the Gippsland 'Q' police district is much greater than the state average, with the rate of assaults growing faster than any other police district.

The total number of serious assaults almost doubled from 142 in 1993/94 to 282 in 1994/95. The state average in 1994/95 was 182.

The figures also rank the district among the top three most violent areas in Victoria, along with metropolitan Melbourne's 'A' district (home to King Street's nightclubs and pubs) and Prahran's 'B' district (home to several busy entertainment venues).

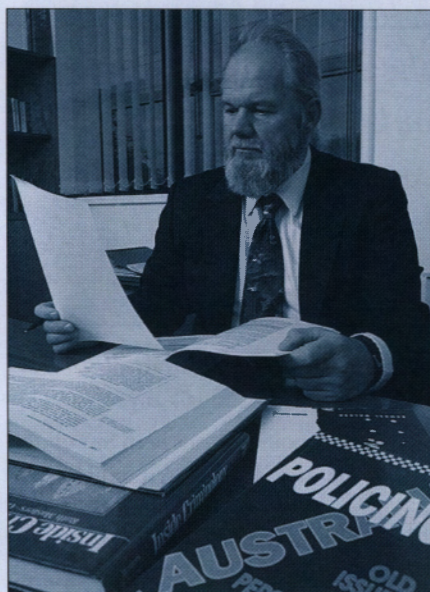
While violence in the other districts is attributed to the large volume of visitors to the area attending licensed premises, the Gippsland figures, in sharp contrast, show that the violence is committed by locals.

Senior Monash research fellow Dr Arthur Venio attributes the problem to a combination of "a culture of aggression" and alcohol use, particularly binge drinking, and high levels of social frustration in the area.

"The violence is part of a ripple effect of social frustration, which has been brought about by high local unemployment as a result of the intensive restructuring of the local power industry," he said.

While the Gippsland crime data represents all serious assaults that occur publicly (around licensed premises) and privately (in homes), the Monash researchers estimate that at least half of the incidents are domestic.

The researchers uncovered the extent of the domestic violence problem three years ago while evaluating a crime prevention strategy initiated by local police to combat public violence and street crime. The police operation aimed to prevent alcohol-related assaults in and around hotels and night-



clubs in the district's main centres, including Moe, Morwell and Traralgon.

Dr Venio said the police crackdown was effective in cleaning up the street violence, but had failed to make an impact on the overall rate of serious assaults, including the hidden domestic violence component.

"Police were clearing up about 90 per cent of the reported assaults – one of the highest crime clearance rates in the state – but they weren't resolving the domestic violence problems," he said.

"Studies of both the number and type of assaults showed that the violence reduction campaign only served to displace the assaults into private homes."

Dr Venio, a criminologist at Monash's Centre for Police and Justice Studies, said studies of the patterns of violence provided a 'demographic profile' of typical offenders, including age, gender, employment status and the location of offences.

"One of the most striking trends to emerge was that 80 per cent of reported cases of domestic violence were incidents by first-time offenders, rather than repeat offenders," he said.

As traditional policing methods had been ineffective in preventing domestic

violence, the challenge, according to Dr Venio, was to redefine the problem and develop a practical plan to address it.

In partnership with the local police, the researchers developed a two-tiered strategy to target domestic violence.

"On the first level, the strategy focuses on treating existing offenders," Dr Venio said. "It aims to achieve this by improving local social services for both the victims and perpetrators of domestic violence, while also demanding greater public accountability of offenders."

"The second level emphasises crime prevention through increased community education programs. While still in its early development stages, we expect that a key part of the program will focus on using local media to reinforce messages that violence, particularly domestic violence, is unacceptable."

Traditionally, the lines of responsibility for service providers in dealing with cases of domestic violence had been blurred. This frequently resulted in victims and offenders "falling through the gaps", Dr Venio said. For example, before the program started many local domestic violence victims – forced to leave their homes during the night under police escort – had to stay in private motels because of limited access to refuges.

The Monash strategy has already brought local service agencies, including social workers, counsellors and police, together to establish a framework for cooperation among services to better manage the problem.

He said the strategy was helping to create a strong sense of community ownership of the domestic violence problem.

"The local community has to be commended for its commitment to reducing violence. They have shown the courage to confront the problem head-on rather than hide from it."

BY BRENDA HARKNESS

Researchers warm to a new cool theory

Scientists now believe that the sulphur particles that cause acid rain and industrial haze are responsible for the cooler than expected temperatures forecast by early models of global warming. Tim Thwaites reports.

THE WORLD'S official arbiter of the extent of climate change now believes human activity is affecting global climate – and a Monash researcher is among those who provided the evidence.

In its most recent scientific assessment, the Intergovernmental Panel on Climate Change (IPCC) – a joint initiative of the United Nations and the World Meteorological Organisation – concludes for the first time that “the balance of evidence suggests a discernable human influence on global climate”.

This conclusion was strongly supported by a paper which has recently appeared in the influential weekly British science journal *Nature*. Among the 13 authors of the paper is the director of the Cooperative Research Centre for Southern Hemisphere Meteorology, Professor David Karoly.

The *Nature* paper reports a first attempt at simulating the combined impact on global temperatures of increasing levels of carbon dioxide and sulphate aerosols in the lower atmosphere and decreasing levels of ozone in the upper atmosphere. The resulting patterns of temperature change which vary with latitude and altitude resemble the observed change between 1963 and 1987.

“IPCC was not able to make such a statement on human influence in the assessments it released in 1990 and 1992,” said Professor Karoly. “Its recent conclu-

sion means that human involvement in climate change is not just talk any more.”

And that point has not been lost on the energy industry, which is responsible for a significant slice of the increase in atmospheric carbon dioxide and sulphate concentrations, and which fears IPCC's assessment will be employed in a campaign to curb the use of fossil fuels.

“(IPCC's) recent conclusion means that human involvement in climate change is not just talk any more.”

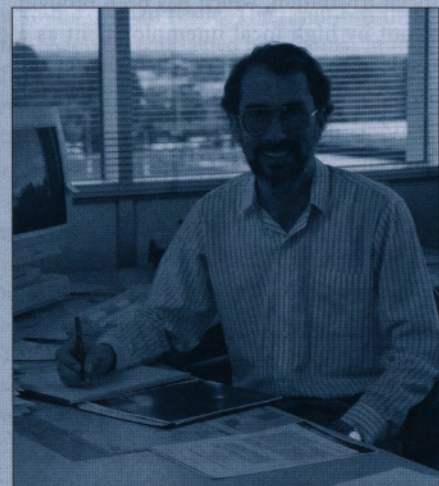
Already, the panel's pronouncement has been attacked by energy industry lobbyists in editorials in the US financial newspaper *The Wall Street Journal* and in the science journal *Physics Today*, as well as by US government committees.

Sunlight absorbed by the Earth is re-emitted as lower energy infra-red radiation or heat. Some gases in the lower atmosphere or troposphere have become known as greenhouse gases because they act like the glass in a greenhouse – they let sunlight through but trap infra-red radiation close to the Earth. Due to human activity,

the levels of several of these greenhouse gases have increased markedly since the industrial revolution – especially in the past few decades. The concern is that this will lead to global warming and have a significant impact on climate.

The most prominent of the human-influenced greenhouse gases is carbon dioxide, the levels of which are increasing in the troposphere because of the burning of fossil fuels. Early computer models of the greenhouse effect, says Professor Karoly, investigated the impact of increases in carbon dioxide alone – on the assumption that the effect of carbon dioxide would overwhelm everything else. In using these models, researchers tended to concentrate on global average temperatures because it was simpler, and they thought the impact on temperature would be much the same everywhere.

The output from the models showed that an increase in the level of carbon dioxide did indeed lead to warming in the troposphere, but the rates of warming predicted by the models were much greater than observed rates. In contrast, the models also showed that increasing carbon dioxide leads to cooling in the upper atmosphere



Professor David Karoly.

or stratosphere, but this cooling was not as great as actually found. (In fact, tropospheric warming and stratospheric cooling is a characteristic pattern now referred to as the 'fingerprint' of climate change.)

Critics of the work, says Professor Karoly, were quick to argue that the outcome of modelling was damaging to the whole idea of the greenhouse effect. The researchers, however, thought it more likely that models were too simple and that factors other than carbon dioxide were at work. They put forward sulphate aerosols (from burning coal for generating electricity) as a prime candidate.

A great deal was already known about sulphate aerosols, because of their importance as a cause of acid rain. Their presence could be discerned as industrial haze, particularly over the Northern Hemisphere. And they had the capacity to reflect solar radiation back into space, so preventing it from reaching Earth. This would tend to reduce the expected magnitude of the warming due to carbon dioxide. Amending the models of the greenhouse effect to take in the impact of sulphate aerosols could lessen the gap between experimental and observed results.

Early computer models investigated the impact of increases in carbon dioxide alone – on the assumption that (its) effect would overwhelm everything else.

At the same time, the researchers began to fine-tune the analysis of their models by abandoning the use of global average temperatures in favour of studying climate change on a regional and altitudinal basis. Professor Karoly was a strong advocate for this. If the models could account for spatial patterns of temperature, Professor Karoly argued, they would provide much stronger evidence that the theory underpinning the models was on the right track.

As they studied altitude more closely, the researchers reasoned that the level of one gas in particular – ozone – was likely to have a significant impact in the stratos-



phere. Ozone absorbs and filters out high-energy ultraviolet radiation in the upper atmosphere. But its level has been decreasing recently because it reacts with human-generated chlorine compounds, released from air-conditioning and refrigeration units. The researchers reasoned that decreasing levels of ozone would lead to less energy absorbed by the stratosphere, hence a cooling effect which would reinforce that already caused by increasing carbon dioxide.

The *Nature* paper represents the first serious attempt at adding some of this complexity into models of global warming – the impact of changing concentrations of sulphates and ozone together with carbon dioxide are investigated over different altitudes and latitudes. And the major observed temperature patterns did indeed emerge from the simulations. The results showed global warming of a magnitude more in keeping with recorded levels. Temperatures are cooler in the Northern Hemisphere because of the higher levels of sulphate aerosols. And the stratosphere shows significant cooling.

But the paper goes further. The researchers ran their models without human-induced changes in atmospheric gases to simulate natural variation of climate over 300, 1000 and 1200 years. They then compared these results with the observed trends, and found that for periods of longer than 25 years the two diverged significantly – the real observa-

tions could not be accounted for by natural variability.

There is still controversy, however. The study reported in the paper was really only preliminary groundwork. The sets of data about each of the factors studied – carbon dioxide, sulphates and ozone – were collected by different groups of researchers over different time periods and were then plugged into different models. So patterns generated by different climate models had to be compared and combined. The researchers published these results at such an early stage because they believed them to be so striking and important.

Amending the models of the greenhouse effect to take in the impact of sulphate aerosols could lessen the gap between experimental and observed results.

In fact, the authors – on the basis of studies of the sensitivity of their methods to error – believe that the trends revealed in their paper are robust. But their critics accuse them of comparing apples with oranges. In response, the researchers are now doing further work to collect and combine all the data into a single model over a standard period of time.

Ovarian tissue bank developed at Monash

Breakthrough reproductive technology is giving new hope to woman facing infertility. Tim Thwaites reports.

Monash reproductive biologists are developing an ovarian tissue bank that may be able to preserve the fertility of women at risk of becoming sterile.

The potential for storing pieces of ovarian tissue has real advantages over the currently available technology of storing eggs or embryos for some common conditions, the researchers said.

The technique involves gathering and freezing a small piece of ovarian tissue containing hundreds of immature egg follicles. At a later date, the tissue could be thawed and reimplanted into the donor. After the tissue had re-established itself, eggs would mature either naturally or with the assistance of hormones. In this way, a woman could retain her ability to conceive either normally or using IVF technology.

Although ovarian reimplantation has not yet been tried in humans, it has already been shown to produce live offspring in mice and sheep. For research purposes, and in anticipation of human applications, a research team from Monash's Institute of Reproduction and Development has already begun to collect and store ovarian tissue from a small number of women at severe risk of losing their ovaries.

"If you are simply taking a small piece of ovary containing immature eggs for later reimplantation in the same person, then there are no ethical concerns," said research team member Professor Carl Wood, a former member of the institute now working in private practice as a gynaecologist specialising in IVF. Professor Wood is providing the project with a clinical focus.

Women at risk of becoming sterile include patients undergoing radio or chemotherapy for cancer, and sufferers of severe endometriosis – a relatively common condition where cells from the lining of the uterus begin to grow in the body cavity.

Even if these women recover completely, their treatment often leads to deterioration of the ovaries and makes them susceptible to menopause at an early age.

A group at the Royal Women's Hospital has already established a unit to preserve mature eggs from such women. But the group has found that it is difficult to produce babies from eggs which have been frozen and thawed. Although several babies were born in Australia using this technique in the mid-1980s, there has been none in Australia or New Zealand in the past five years.

"It may be that eggs are difficult to freeze and thaw because of the large size of the cell," Professor Wood said. "Recently, new freeze-thaw procedures have been developed for domestic animals, but these have yet to be modified for human use."

Storing ovarian tissue had several advantages over freezing and then thawing mature eggs, Professor Wood said. For a start, the whole process was simpler. Ovarian tissue can be taken from pre- or post-pubertal women at any time of the menstrual cycle. Hundreds of immature

follicles can be collected by taking about one or two square centimetres of tissue in a relatively routine operation.

Mature eggs, on the other hand, can only be harvested during a limited time in each menstrual cycle, and rarely in large numbers. For ovaries to shed any more than one or two eggs at a time, they have to be stimulated by the addition of the hormone oestrogen. But oestrogen exacerbates severe endometriosis and some forms of breast and ovarian cancers.

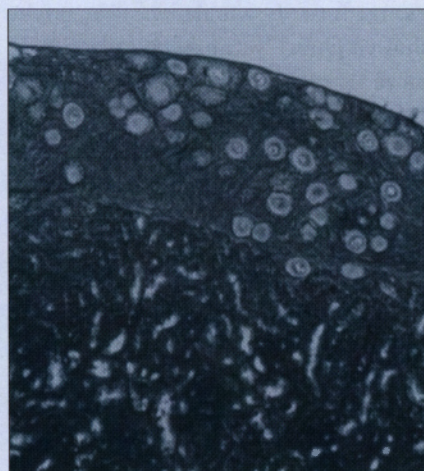
At the Institute of Reproduction and Development, Dr Jill Shaw and Professor Alan Trounson have already begun to work with human ovarian tissue. In one experiment, Dr Shaw froze ovarian tissue, then thawed small portions and implanted them into mice. Four weeks later, the transplanted tissue had survived and grown, and was displaying healthy egg follicles.

But transplanting ovarian tissue is not without its drawbacks. One of these is the possibility of transmitting disease. A particular risk is the transmission of blood-borne cancers such as leukaemia and whole-body cancers such as lymphoma.

In an initial investigation of the potential for disease transmission, Dr Shaw transferred small pieces of ovary from donor mice carrying lymphoma into healthy mice. In 13 of the 14 grafts, the cancer was transferred to the recipients with the ovarian tissue. The result was that the recipients contracted lymphoma. In the future, it may be possible to test and remove cancerous cells from ovarian tissue before transfer.

However, Professor Wood said there were encouraging signs that storing ovarian tissue would be helpful for women suffering from conditions that were neither malignant nor infective but that put them at risk of sterility or premature menopause. The most common of these would be the severe forms of endometriosis, a condition which can affect up to one in 10 women.

The group is now looking for women at risk of losing their ovaries due to severe endometriosis to assist it in its research.



Egg follicles of human ovarian tissue growing under the kidney capsule of skid mice.

ARCing up the safety ratings

As the Monash Accident Research Centre expands its vehicle crash ratings, the biggest impact could be on the car market.

The centre recently published its third report rating the 'crashworthiness' of cars on Australian roads. Researchers examined data from nearly 300,000 accidents throughout NSW and Victoria between 1987 and 1994, and concluded that drivers of some models were up to six times more likely to be killed or seriously injured than others in comparable collisions.

Generally, larger cars were found to offer more protection than smaller ones, with Mitsubishi's Verada and Magna sharing the honours for the safest vehicles with the Toyota Cressida and the Volvo 700 series. The worst cars to crash in were deemed to be the Subaru Sherpa and Suzuki Mighty Boy.

But there were also significant differences in the ratings of cars of the same size, with the Peugeot 505 judged to offer at least three times more protection than the Nissan Gazelle in the 'medium car' range.

The media attention and resulting consumer pressure from this report, and previous results published in 1992 and 1994, have encouraged car manufacturers to cooperate with the research and inspired the Federal Government to join the states in backing the project.

ARC senior research fellow Mr Max Cameron said the ratings worked with legislation to maintain the push for safer vehicle designs.

"If you graph the crashworthiness of models built from 1964 to 1992, you can see that manufacturers have reduced the risk of serious injury for drivers involved in tow-away crashes by nearly 50 per cent," he said.

"The greatest improvements came in the 1970s when Australian Design Rules came into effect, but this progress slowed dramatically during the 80s and early 90s when no new legislation was introduced.

"Australia is a relatively small part of the world car market, and our legislators are reluctant to do anything unique. So the approach we, and state organisations, have

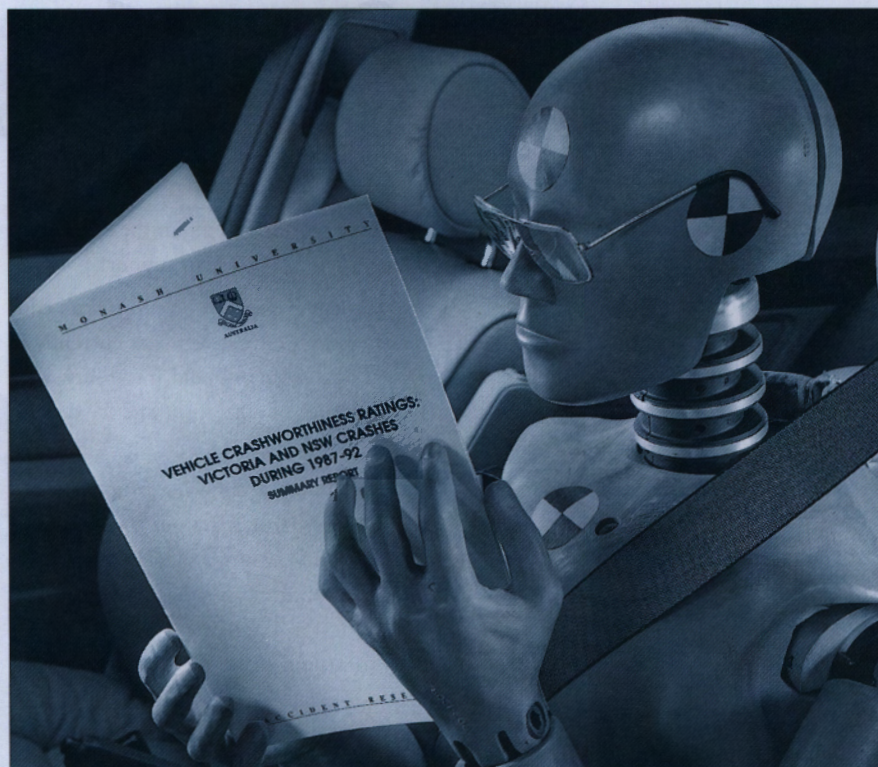


Photo courtesy of BMW Australia

supported with ratings is encouraging the development of safer cars."

The plan seems to be working. Manufacturers whose cars have performed well in the analysis are using the results in their advertising – the ultimate recognition that safety is an important priority for the buying public.

And to help spread the word, the ARC's research partners – the Road Traffic Authority, NRMA, RACV and VicRoads – have printed 400,000 copies of a brochure which summarises the latest research.

Mr Cameron said crash data collection was about to be stepped up so the centre could release annual updates, and he was confident that the next year's research would be expanded to include information from Queensland and South Australia.

Also for the first time, the next stage of research will have the financial support of the Federal Office of Road Safety, and, most importantly, will include data from manufacturers' records on optional safety equipment fitted to individual cars involved in accidents.

"Over the past couple of years, some manufacturers have offered safety features such as driver air bags before it was compulsory to do so. This variation in individual cars of the same models has made it more

difficult to accurately rate their crashworthiness, so the manufacturers' cooperation is a significant bonus," Mr Cameron said.

The research methodology has comprised collecting injury and vehicle damage data from the Transport Accident Commission and police reports. Crashworthiness is measured by calculating the severity of drivers' injuries and the risk of them being injured when involved in a crash.

Complex statistical analysis allows for factors known to strongly influence injury risk and severity, such as driver sex and age, the speed limit at the crash location and the number of vehicles involved in the accident.

Because the results are based on 'real life' events, they produce a useful guide to relative safety for buyers of used cars. Mr Cameron stressed that the ratings do not measure how likely a particular model is to be involved in a crash, but only the likelihood of a driver being killed or seriously injured once a crash has occurred.

The ARC is also investigating ways to expand its study to investigate the injury risk posed by different vehicles to passengers and pedestrians.

Copies of the brochure summarising its latest report are available from RACV branches and VicRoads offices.

BY GARY SPINK

Redefining education in a new South Africa

South Africa's education system is currently undergoing a major transformation which coincides with the country's political overhaul, according to an international education expert.

Professor Philip Higgs, from the University of South Africa, said that while the ideology of Christian Nationalism had dominated the political and educational agenda before the historic 1994 elections, 'nation-building' and 'democratisation' had become the rhetoric of the new system.

In a speech titled 'Education and Change in South Africa' delivered at Monash University recently, Professor Higgs spoke about the move away from a state-provided education system to one in which local communities were playing an increasing role.

"People have indicated that they want more involvement in the education system, more of a partnership role," he said.

"This puts the burden back onto the people to finance and provide education for their own communities – this has not been the case before."

"People have indicated that they want more involvement in the education system, more of a partnership role."

Professor Higgs, who spent three months at Monash as part of an international research project, said the rigid demarcation of ethnic groups had broken down and the emphasis was now on creating an education system more in tune with the needs of the economy.

He said that as part of the transformation process, there had also been talk of dismantling the private school system. It was

eventually decided to retain the system but with reduced government support.

Professor Higgs said South Africa's education and training system was currently in a state of uncertainty and instability, with 15 ministries of education and 19 departments of education.

"The system is suffering from inconsistency in standards, a serious breakdown of the culture of learning, imbalances in funding and qualifications, a legacy of illiteracy, and too few mathematics and science graduates to sustain economic growth."

In his speech, Professor Higgs described the country's three traditional educational philosophies, which he believed represented the "ideological handmaiden" of political agendas prevalent in South Africa.

Conservative ethnic nationalism, with Afrikaner nationalism predominant, saw education as a process of moulding children in the image of its teachers and was founded on Christian and national values. The teacher was an authority figure who embodied the ideal qualities of the community. Its emphasis on the importance of national identities was at the root of the development of a segregated or apartheid system.

The liberal tradition, to be found in many English language institutions, put its emphasis on freedom and individual potential. It encouraged a tolerance of diversity of ideas, beliefs and cultures and the freedom to exercise autonomous reason and judgement.

Professor Higgs said that the third ideology – and the one that had gained ascendancy with the 1994 political upheaval – was radical liberation socialism, which included the views of the parties to the left of the political spectrum. Education was seen as a way of teaching people about the

conditions of their oppression, rather than reinforcing the dominant capitalist culture.

But Professor Higgs believed it was not just in South Africa that the education system was characterised by the dominant political ideology.

In Australia, for example, the recent moves by the Federal Government to cut funding to higher education by up to 12 per cent was part of the political move towards economic rationalism.

"The system is suffering from inconsistency in standards, a serious breakdown of the culture of learning, imbalances in funding and qualifications, a legacy of illiteracy, and too few science graduates to sustain economic growth."

He said the degrading of the humanities and increasing emphasis on vocational courses was also a reflection of Australia's dominant political ideology.

During his time at Monash, Professor Higgs worked with Professor David Aspin from the university's Education faculty on a major research project involving 60 internationally recognised scholars.

The project involved the publication of nine volumes of research on the six different metatheoretical perspectives that influence the philosophy of education. Professor Aspin is the editor of the second volume, *Logical Empiricism, Post Empiricism and Educational Discourse*, published recently.

BY GEORGIE ALLEN

Contracting out not always the answer

Contracting out government services is not always effective in achieving cost savings or improving service, according to a Monash study.

And in many situations, privatisation and competitive tendering can impose serious social costs, according to Mr Graeme Hodge, a researcher from the university's Graduate School of Government.

Mr Hodge analysed the economic performance measurements from 245 case studies in the US, Britain and Australia in which government services were contracted out, and found no hard evidence of efficiency gains for service providers or benefits to the public.

Commenting on the study, Mr Hodge said the findings called into question the logic behind current competition reforms which held that services were more efficiently run by the private sector.

"The research shows that the savings generated through privatisation and competitive tendering within local government were limited mainly to services such as council-run garbage collection, maintenance and cleaning," he said.

But rather than delivering savings of about 20 per cent, as advocates of privatisation had claimed, these areas only saw cost reductions of between 9 and 14 per cent.

"And in many cases there was no indication of savings or quality improvements in tendering out services such as health and human services, transport and corporate services.

"Hard data on the effectiveness of contracting, for instance in health and human services, is scant and it is debatable whether the contracting of such services is effective."

Among its key findings, the report also indicated:

- part-time workers, ethnic minorities and women were among those most likely to be affected by job losses resulting from contracting out, particularly in rural areas;

- contracting out can open the way for corruption through increased pressure for 'cosy deals';

- local government operations can become closed off from public scrutiny and accountability;

- authorities can use contracting out to distance themselves from responsibility for local service delivery;

- contracting in (within the organisation) can be almost as effective in achieving savings.

Mr Hodge said the findings were significant for all government service providers as they were being increasingly encouraged to use the private sector to provide services.

At a state level, the findings also have widespread implications, particularly in Victoria, where local councils are required by law to open up most services to compulsory competitive tendering (CCT).

"In Victoria, CCT should stand for careful competitive tendering," Mr Hodge said.

He believed the findings showed that not all government services needed to be opened up to competitive tendering to achieve cost savings and service delivery improvements.

"We found that a climate of competition, combined with increasing awareness of the need for achieving efficiencies, led to performance improvements both within the public sector and outside service agencies operating nearby."

BY BRENDA HARKNESS

Copies of the report, 'Contracting Out Government Services: A Review of International Evidence', are available for \$30 from Ms Jean Lyon, Monash Graduate School of Government, telephone (03) 9903 8754.



Indonesia's success is Australia's gain

Monash's Graduate School of Government recently published and launched the book *Public Administration in Indonesia*.

Written by Rainer Rohdewohld, it provides the first comprehensive overview in English of Indonesia's system of public administration.

Launching the book, the secretary of Australia's Department of Foreign Affairs and Trade, Mr Phillip Flood, said it was crucial that Australia's public and private sectors understood the workings of its closest northern neighbour, to strengthen future business and investment opportunities and forge closer government cooperation.

Mr Flood said World Bank figures put Indonesia among the top five economies

alongside China, the US, Japan and India by the year 2020.

"As Australians, we need to condition ourselves to the fact that there is dramatic change occurring to our north, and that there is a very powerful economy converging on our doorstep," he said.

"We have to realise that Indonesia is as close to Australia as Orbst is to Melbourne. Its population may settle at between 300 and 350 million over the next decade, which will make it the third largest country in the world, overtaking the US." Currently, Indonesia is fourth largest after China, India and the US.

Mr Flood said the book made a valuable contribution to Australia's store of knowledge about Indonesia's economics, government and politics.

It also offered opportunities to explore new avenues for increased public sector cooperation between Australia and Indonesia in areas such as trade, agriculture and science.

The three tiers of public administration in Australia – federal, state and local – have been undergoing rapid change in recent years.

"Indonesia is undergoing a similar transition with substantial changes in its public sector, and I believe there are real opportunities for us to work together in that area," Mr Flood said.

Published by Monash Graduate School of Government
RRP \$30

Developing Reflective Practice: Learning About Teaching and Learning Through Modelling

By John Loughran
Published by Falmer Press
RRP \$30.95

In this book John Loughran documents the results of a longitudinal study into the development of reflective practice in a group of student-teachers. He concludes that reflective modelling in teacher education is important in encouraging deliberative and thoughtful practitioners.

John Loughran is director of pre-service teacher education in Monash University's Education faculty.

Bridgings: Readings in Australian Women's Poetry

Edited by Rose Lucas and Lyn McCredden
Published by Oxford University Press
RRP \$29.95

This book introduces and critiques the poetry of seven 20th-century Australian poets: Judith Wright, Gwen Harwood,

Dorothy Hewitt, J. S. Harry, Dorothy Porter, Ania Walwicz and Gig Ryan.

An introduction to the work of each poet, a selection of their better and lesser known poems, a critical essay and a biographical note on each poet is provided.

Rose Lucas is director of the Centre for Women's Studies at Monash University.

Victorian Icon: The Royal Exhibition Building

Edited by D. Dunstan
Published by Australian Scholarly Publishing
RRP \$59.95

Featuring historic photos and drawings, this beautifully presented book tells the story of the Royal Exhibition Building's social, political and cultural history.

The building, built in 1880, has housed national and state parliaments, been a renowned international exhibition venue and in the 1940s was almost demolished.

Fifteen writers contributed to the book, with Monash historian David Dunstan writing a third of the chapters.

Japanese Science, Technology, and Economic Growth Down-Under

Edited by Morris Low and Helen Marriott
Published by Monash Asia Institute
RRP \$22

The 1980s was a particularly interesting time in the relationship between Japan and Australia. Major property acquisitions by Japanese entrepreneurs had an unsettling effect on the local populations, creating dissension and a defensive attitude in those who felt threatened. Others enthusiastically embraced such development and developed an interest in things Japanese.

In the 1990s more Australians are making an attempt to understand Japan through a study of its language, society and culture as well as through economics, politics, history and anthropology.

This collection of papers, written by some of Australia's leading Japan scholars, explores the relationship between the two countries and reveals a growing sophistication in Australia's understanding of Japan.

Helen Marriott is an associate professor in the Department of Japanese Studies at Monash.

All books in this column can be purchased in the Monash University Bookshop, Clayton campus.

The gatherer

A book documenting the life and work of Monash painter Wendy Stavrianos will be launched this month, accompanied by the opening of a series of exhibitions of her latest work.

Stavrianos's paintings are dominated by figures she calls 'gatherers' which scurry through impersonal landscapes, unselfishly gathering, nurturing and offering hope.

"They are bearers of meaning in a world that applauds meaninglessness," Stavrianos said.

"The gatherer is a figure of hope or belief. She is the gatherer of fuel for warmth, and yet in a deeper sense she is the flame that transforms fuel to fire – she is the shelter and the strength."

But these nurturing figures are often forced to share the canvas with spiritless symbols of materialism and selfishness.

They are surrounded by ominous, urban environments that act as metaphors for the internal landscapes of the artist's psyche – recalling memories or states of loneliness.

The message from the gatherers is not just designed for the viewer – it serves as an inspiration for the artist, and she acknowledges that it has been a major factor in helping her cope with the death of her son three years ago.

Since Peter Stavrianos died at the young age of 24, the artist has used the gatherers to question what is important in life and to search for insights from dealing with disillusionment and loss.

The telecommunications towers and cables that he worked with in his career



have become regular features in her landscapes, and she describes her latest paintings as a tribute to him.

"In some ways, I'm living for my son. When I'm lacking the energy to paint, he is the voice within me saying 'it's important to get up and continue'. He still gives me hope," she said.

Stavrianos is interested in the difficulties facing female artists in a male-oriented society, and in her paintings a male figure representing coldness and reason will be contrasted with the uplifting actions of a female gatherer.

She concedes that hers is a feminist view of the world, but it's a label she is uncomfortable with. She prefers to see her outlook as a personal one that reflects instinctive social values.

"I want to bring people back to their instinctive selves, the old values that have kept society together," she said.

"If we don't pay attention to our instincts, I fear for our environment and I fear for us as we head into the next century. My paintings are really about the lost values of our time."

Stavrianos has been painting nearly every day since last Christmas in preparation for her forthcoming exhibitions, only breaking for her part-time teaching role as co-head of painting at Monash University's College of Art & Design.

The Gatherers and the Night City shows in Sydney, Melbourne and Canberra in September. The showings are the latest in a regular series of Stavrianos exhibitions that have been held over the past 20 years, and

her works are collected by an impressive list of national and regional art galleries.

But the monograph *Wendy Stavrianos* by arts writer Laura Murray Cree will be a new experience.

*"I fear for our
environment and I
fear for us as we head
into the next century.
My paintings are
really about the lost
values of our time."*

"It's so important to me that people respond to my work, and this kind of recognition is what every artist dreams of but very few receive."

The book is as much about Stavrianos as it is about her art. The history of her work is the story of her life, and the text links the two with more than 60 colour and black-and-white images.

"I've given my whole life to art. It absorbs me too much, but I can't do anything about that. It's like having an addiction – I'm just lucky that my drug is art."

BY GARY SPINK

The Melbourne launch of the book will take place at the Lyall Burton Gallery on 10 September, and the accompanying exhibition of the artist's latest works will continue for several weeks.



Whose mandate?

At a recent seminar organised by the Monash Graduate School of Government, political commentator and Monash lecturer Professor Hugh Emy argued that to implement policy on the strength of its mandate, the government must keep its election promises.

With a majority of 45 seats in the House of Representatives, Mr Howard claims "a powerful mandate" for Coalition policies. Senator Kernot claims an equal and competing mandate for the Democrats in the Senate. Whose claim is better founded?

First, what is 'the mandate'? It is used to refer to a fairly strict, even contractual relationship between government and people. The government's right to legislate was limited to those policies to which the electorate had given prior approval. It should honour the commission or mandate given it by the voters and not go beyond it.

Mr Howard promised specifically that whatever the size of the deficit, that would not justify breaking other promises.

Political scientists have largely rejected this view as unworkable. Nowadays, 'mandate' has a more permissive meaning. Winning an election gives a party both a general right to govern and a right to initiate legislation foreshadowed at the election. Conversely, the public has a right to expect that the new government will abide by the terms of its mandate: as far as possible, it should honour its promises and commitments. If it does not, it stands accused of dishonouring its mandate.

The aim of mandate doctrine is to help regulate the relationship between rulers and ruled under representative democracy. 'Mandate' embodies two faces: the right of

the elected government to govern in terms of its announced policies, and the right of citizens to expect consistency from government. The latter forms part of our system of public accountability. The dispute between Howard and Kernot is really over which face of the mandate should prevail. Political science suggests that good government depends on a balanced relationship between the two.

Initially, Howard has the better-grounded claim because 'mandate' properly refers to a grant of authority from people to government. The term refers to the terms and conditions on which the executive may govern. To say that a minor party in the Senate can assert its own mandate is inconsistent with the core principle which establishes just who is entitled to govern; the majority party in the lower House. The fact that the Senate is democratically elected does not affect this point. To give opposition parties in the Senate an equal mandate is a recipe for political paralysis, given the usual numbers in the Senate. Given that the Howard Government announced its intention to privatise one-third of Telstra and to make certain specific changes to industrial relations legislation, it can fairly claim a mandate for these, its core policies.

It may also claim a broader right to govern, but this does not override its duty of accountability to the legislature. The latter, especially the Senate, is the body responsible for 'policing' the mandate – checking whether a draft Bill departs significantly from what was foreshadowed, or confers too much discretion on the executive. Given the known weaknesses of the House as a legislative chamber, the Senate must now play a more active role in enforcing accountability. The Government can fairly claim a right to initiate legislation; the clos-



er the fit between its announced intentions and a Bill, the stronger the presumption that the Bill should pass. However, it must expect the Senate, as a responsible legislative chamber, to examine bulky and/or controversial legislation all the more closely.

A government judged to be guilty of exploiting its right to govern, or of excessive sophistry, can destroy its own mandate.

The Howard Government may also find that its policies to reduce the deficit undermine the status of its mandate in other areas. It won office by offering reassurance and minimal change in several contentious areas. Mr Howard promised specifically that whatever the size of the deficit, that would not justify breaking other promises. If the number of changes to policy and their substantive content suggests that a new policy pattern is emerging which is (1) at odds with what was promised; (2) cannot be altogether explained by appeals to fiscal necessity; and (3) suggests ideological motives concealed from voters at the election, it might allow the Democrats to take the view that Mr Howard's overall policies absolved them from the need to respect his mandate for core policies. A government judged to be guilty of exploiting its right to govern, or of excessive sophistry, can destroy its own mandate.